AMENDMENTS TO THE CLAIMS

Kindly cancel claim **7** and amend claims, **1**, **4**, **16**, **41** **43**, **47** and **50** and add new claim **53** as shown in the listing of claims below. This listing of claims will replace all prior versions, and listings of claims in the application.

LISTING OF CLAIMS

1. (currently amended) A hybrid microlens, comprising two layers that are transparent at a wavelength of interest, including:

a first layer that has a low index of refraction;

a second layer affixed to said first layer; [[and]]

said second layer having an optical focusing element formed on the surface non-adjacent to said first layer, said second layer being substantially thinner and having a higher index of refraction than the first layer, thereby reducing both the microlens sag and the sum of the two layer thicknesses; and

an antireflection layer situated between the first and second layers, said antireflection layer being optimized for the refractive indices of said first and second layers.

2. (previously presented) The hybrid microlens of claim 1 wherein said optical focusing element comprises a refractive microlens.

3. (original) The hybrid microlens of claim 1 wherein said optical focusing element is formed by dry etching.

4. (currently amended) The hybrid microlens of claim 1 wherein said first layer comprises one of fused silica ~~and~~ or optical glass.

5. (previously presented) The hybrid microlens of claim 1 wherein said second layer comprises a semiconductor.

6. (original) The hybrid microlens of claim 1 wherein said second layer is comprised substantially of silicon.

7. (canceled).

8. (previously presented) The hybrid microlens of claim 1 wherein said second layer comprises a plurality of trenches that divide said second layer into a plurality of portions thereby providing reduced mechanical stress in the second layer.

9-15. (canceled)

16. (currently amended) A method for making a plurality of hybrid microlenses with a first layer and a second layer, said first layer having a lower index of refraction than said second layer, comprising the steps of:

forming an anti-reflection coating ~~one of~~ between said first and second layers;

affixing the second layer to the first layer; [[and]]

forming a plurality of optical focusing elements on the surface of the second layer non-adjacent to said first layer

17. (previously presented) The method of claim 16 wherein said optical focusing element comprises a refractive microlens.

18. (previously presented) The method of claim 16 wherein said method of forming said optical focusing elements comprises dry etching.

19-20 (canceled)

21. (previously presented) The method of claim 16 further comprising thinning and polishing the second layer after bonding the layers and before forming said plurality of optical focusing elements.

22. (previously presented) The method of claim 16 wherein said step of forming a plurality of optical focusing elements is performed before bonding said first and second layers.

23. (previously presented) The method of claim 16 wherein said step of bonding said first and second layers comprises anodic bonding.

24. (previously presented) The hybrid microlens of claim 1, wherein said first layer comprises a non-perpendicular optical surface formed on a surface non-adjacent to said second layer, said non-perpendicular optical surface approximately aligned with said optical focusing element.

25. (previously presented) The hybrid microlens of claim 1 further comprising an optical fiber affixed to said first layer, said optical fiber having an end face situated proximate to said first layer, said optical fiber having a core arranged with respect to said optical focusing element to couple light between said core of said optical fiber and said optical focusing element.

26. (previously presented) The hybrid microlens of claim 25 wherein said first layer comprises a non-perpendicular surface formed on the first layer non-adjacent to said optical focusing element.

27. (previously presented) The hybrid microlens of claim 25 wherein said optical focusing element is arranged with respect to said core so that said core is approximately at a focal point defined by said optical focusing element.

28-40 (canceled)

41. (currently amended) A hybrid microlens having two layers that are transparent at a wavelength of interest, comprising:

a first layer that has a low index of refraction;

a second layer affixed to said first layer;

an antireflection layer situated between the first and second layers for reducing optical loss due to the differences in the [[the]] refractive indices of said first and second layers; and

said second layer having an optical focusing element formed on the surface non-adjacent to said first layer, said second layer being substantially thinner and having a higher index of refraction than the first layer, thereby reducing both the microlens sag and the sum of the two layer thicknesses.

42 (previously presented) The hybrid microlens of claim 41 wherein said optical focusing element comprises a refractive microlens.

43. (currently amended) The hybrid microlens of claim 41wherein said first layer comprises one of fused silica ~~and~~ or optical glass.

44. (previously presented) The hybrid microlens of claim 41 wherein said second layer comprises a semiconductor.

45. (previously presented) The hybrid microlens of claim 41 wherein said second layer comprises a plurality of trenches that divide said second layer into a plurality of portions thereby providing reduced mechanical stress in the second layer.

46. (previously presented) The hybrid microlens of claim 41 further comprising an optical fiber affixed to said first layer, said optical fiber having an end face situated proximate to said first layer, said optical fiber having a core arranged with respect to said optical focusing element to couple light between said core of said optical fiber and said optical focusing element, wherein said optical focusing element is arranged with respect to said core so that said core is approximately at a focal plane defined by said optical focusing element.

47. (previously presented) A hybrid microlens, having two layers that are transparent at a wavelength of interest, comprising:

a first layer;

a second layer affixed to said first layer; [[and]]

said second layer having an optical focusing element formed on the surface non-adjacent to said first layer, said second layer having a higher index of refraction than the first layer, and

an antireflection layer situated between the first and second layers, said antireflection layer being optimized for the refractive indices of said first and second layers.

48. (previously presented) The hybrid microlens of claim 47 wherein said optical focusing element comprises a refractive microlens.

49. (previously presented) The hybrid microlens of claim 47 wherein said optical focusing element is formed by dry etching.

50. (currently amended) The hybrid microlens of claim 47 wherein said first layer comprises one of fused silica ~~and~~ or optical glass.

51. (previously presented) The hybrid microlens of claim 47 wherein said second layer comprises a semiconductor.

52. (previously presented) The hybrid microlens of claim 47 wherein said second layer is comprised substantially of silicon.

53. (new) The hybrid microlens of claim 24 wherein said non-perpendicular surface is substantially transparent to light traveling to or from the focusing element, said non-perpendicular surface being angled such that light from an optical fiber aligned with said optical focusing element that is reflected from said non-perpendicular surface is directed away from said optical fiber.